

WHAT IS CLAIMED IS:

1. A communication node, comprising:  
a first interface unit connected to a first network;  
5 a second interface unit connected to a second network;  
a recognition unit for recognizing one communication  
node on the first network as one of constituent elements in  
said communication node; and  
a configuration information disclosure unit for  
10 disclosing an own configuration information regarding the  
constituent elements as recognized by the recognition unit,  
to another communication node on the second network through  
the second interface unit.
- 15 2. The communication node of claim 1, wherein the  
configuration information disclosure unit also discloses  
existing constituent elements in said one communication  
node on the first network as sub constituent elements in  
the constituent elements of said communication node.
- 20 3. The communication node of claim 1, further comprising:  
a detection unit for detecting a first message  
identifier on the second network which is described in a  
packet received through the second interface unit;  
25 a message identifier attaching unit for attaching a  
second message identifier on the first network to the  
packet at a time of transferring the packet to the first  
network;  
a message identifier correspondence memory unit for  
30 storing a correspondence between the first message  
identifier and the second message identifier; and  
a routing unit for identifying a message identifier on  
the second network corresponding to one message identifier  
on the first network which is described in a packet sent  
35 from the first network, by referring to the correspondence

stored by the message identifier correspondence memory unit according to said one message identifier.

4. The communication node of claim 1, further comprising:  
5 a resource acquisition unit having at least one of a function for reserving a network resource on the second network by using a first resource information regarding a network resource reserved on the first network, and a function for reserving a network resource on the first network by using a second resource information regarding a network resource reserved on the second network; and  
10 a resource information correspondence memory unit for storing a correspondence between the first resource information and the second resource information.

15 5. The communication node of claim 1, further comprising at least one of:  
a node constituent elements information addition unit for adding a new configuration information regarding  
20 constituent elements in a new communication node to the own configuration information regarding constituent elements in said communication node, when the new communication node is added on the first network; and  
a node constituent information deletion unit for  
25 deleting an old configuration information regarding constituent elements in an old communication node from the own configuration information regarding constituent elements in said communication node, when the old communication node is deleted from the first network.

30 6. The communication node of claim 1, further comprising:  
a configuration information notification unit for notifying to said one communication node on the first network at least a part of the own configuration  
35 information regarding constituent elements in said

communication node including constituent elements corresponding to said one communication node or constituent elements in said one communication node; and

5 a configuration information reception unit for receiving from said one communication node at least a part of another configuration information regarding constituent elements in one other communication node on the second network including constituent elements corresponding to said one communication node or constituent elements in said one communication node, that was notified from said one other communication node to which said one communication node was connected up until then.

7. The communication node of claim 1, further comprising:  
15 a communication resource notification unit for notifying to said one communication node on the first network a resource information regarding communication resources on the second network that are exclusively used for communications between said one communication node and one other communication node on the second network to which said one communication node was connected up until then;  
20 and

a configuration information reception unit for receiving from said one communication node the resource information, that was notified from said one other communication node.  
25

8. A communication node, comprising:  
a first interface unit connected to a first network;  
30 a second interface unit connected to a second network;  
and  
a configuration information disclosure unit having at least one of a function for disclosing a first configuration information regarding constituent elements in  
35 one communication node on the first network as an own

configuration information regarding constituent elements in  
said communication node, to another communication node on  
the second network through the second interface unit, and a  
function for disclosing a second configuration information  
5 regarding constituent elements in said another  
communication node on the second network as the own  
configuration information regarding constituent elements in  
said communication node, to said one communication node on  
the first network through the first interface unit.

10 9. The communication node of claim 8, wherein the  
configuration information disclosure unit discloses the  
first configuration information by defining said one  
communication node on the first network as one type of  
15 constituent elements of said communication node.

10. The communication node of claim 8, further comprising:  
a configuration information correspondence memory unit  
for storing a correspondence between the first  
20 configuration information disclosed to the second network  
as constituent elements corresponding to said one  
communication node or constituent elements existing in said  
one communication node, and actual configuration  
information regarding said one communication node or  
25 constituent elements existing in said one communication  
node; and

a routing unit for identifying a destination  
communication node on the first network or a destination  
constituent element of the destination communication node  
30 on the first network for a packet sent from the second  
network, by referring to the configuration information  
correspondence memory unit according to identifiers of  
constituent elements in said communication node which are  
disclosed by the configuration information disclosure unit  
35 ~~and described in the packet~~

11. The communication node of claim 8, further comprising:  
a detection unit for detecting a first message  
identifier on the second network which is described in a  
5 packet received through the second interface unit;  
a message identifier attaching unit for attaching a  
second message identifier on the first network to the  
packet at a time of transferring the packet to the first  
network;  
10 a message identifier correspondence memory unit for  
storing a correspondence between the first message  
identifier and the second message identifier; and  
a routing unit for identifying a message identifier on  
the second network corresponding to one message identifier  
15 on the first network which is described in a packet sent  
from the first network, by referring to the correspondence  
stored by the message identifier correspondence memory unit  
according to said one message identifier.
- 20 12. The communication node of claim 8; further comprising:  
a resource acquisition unit having at least one of a  
function for reserving a network resource on the second  
network by using a first resource information regarding a  
network resource reserved on the first network, and a  
25 function for reserving a network resource on the first  
network by using a second resource information regarding a  
network resource reserved on the second network; and  
a resource information correspondence memory unit for  
storing a correspondence between the first resource  
30 information and the second resource information.
13. The communication node of claim 8, further comprising  
at least one of:  
a node constituent elements information addition unit  
35 for adding a new configuration information regarding

constituent elements in a new communication node to the own configuration information regarding constituent elements in said communication node, when the new communication node is added on the first network; and

5 a node constituent information deletion unit for deleting an old configuration information regarding constituent elements in an old communication node from the own configuration information regarding constituent elements in said communication node, when the old  
10 communication node is deleted from the first network.

14. The communication node of claim 8, further comprising:

a configuration information notification unit for notifying to said one communication node on the first  
15 network at least a part of the own configuration information regarding constituent elements in said communication node including constituent elements corresponding to said one communication node or constituent elements in said one communication node; and

20 a configuration information reception unit for receiving from said one communication node at least a part of another configuration information regarding constituent elements in one other communication node on the second network including constituent elements corresponding to  
25 said one communication node or constituent elements in said one communication node, that was notified from said one other communication node to which said one communication node was connected up until then.

30 15. The communication node of claim 8, further comprising:

a communication resource notification unit for notifying to said one communication node on the first network a resource information regarding communication resources on the second network that are exclusively used  
35 for communications between said one communication node and

one other communication node on the second network to which  
said one communication node was connected up until then;  
and

5 a configuration information reception unit for  
receiving from said one communication node the resource  
information, that was notified from said one other  
communication node.

10 16. A communication node, comprising:  
a first interface unit connected to a first network;  
a second interface unit connected to a second network;  
a packet input/output unit for carrying out packet  
input/output processing according to a protocol of the  
second network; and

15 an application interface information transfer unit for  
transferring data to be exchanged at an interface between  
the packet input/output unit and an application executed on  
another communication node on the second network, through  
the first interface unit, so as to handle one communication  
20 node connected through the first interface unit as if said  
one communication node is connected to the second network.

17. The communication node of claim 16, further  
comprising:

25 a detection unit for detecting a first message  
identifier on the second network which is described in a  
packet received through the second interface unit;

30 a message identifier attaching unit for attaching a  
second message identifier on the first network to the  
packet at a time of transferring the packet to the first  
network;

a message identifier correspondence memory unit for  
storing a correspondence between the first message  
identifier and the second message identifier; and

35 a routing unit for identifying a message identifier on

the second network corresponding to one message identifier on the first network which is described in a packet sent from the first network, by referring to the correspondence stored by the message identifier correspondence memory unit  
5 according to said one message identifier.

18. The communication node of claim 16, further comprising:

10 a resource acquisition unit having at least one of a function for reserving a network resource on the second network by using a first resource information regarding a network resource reserved on the first network, and a function for reserving a network resource on the first  
15 network by using a second resource information regarding a network resource reserved on the second network; and

a resource information correspondence memory unit for storing a correspondence between the first resource information and the second resource information.

20 19. A communication terminal, comprising:

an interface unit connected to a first network;

a connection unit for making a connection to a first communication node on the first network through the interface unit;

25 a communication unit for communicating with a second communication node on a second network different from the first network, through the first communication node;

30 a communication terminal function disclosure unit for disclosing functions in said communication terminal as Sub Units in an AV/C (Audio/Visual Control) protocol executed on an IEEE 1394 bus; and

a Sub Unit information reception unit for receiving at least a part of information regarding Sub Units existing in the second communication node.



20. The communication terminal of claim 19, further comprising:

5 a configuration information reception unit for receiving at least a part of a configuration information regarding constituent elements existing in the first communication node including a constituent element corresponding to said communication terminal, which is notified from the first communication node in order for the first communication node to handle said communication terminal as one of constituent elements existing in the first communication node;

10 a configuration information memory unit for storing at least a part of the configuration information received by the configuration information reception unit; and

15 a configuration information notification unit for notifying at least a part of the configuration information stored in the configuration information memory unit, to a third communication node on the second network to which said communication terminal is newly connected.

20 21. The communication terminal of claim 19, further comprising:

25 a communication resource information reception unit for receiving a communication resource information regarding communication resources on the second network which are exclusively used for communications between said communication terminal and the second communication node, which is notified from the first communication node;

30 a communication resource information memory unit for storing at least a part of the communication resource information received by the communication resource information reception unit; and

35 a communication resource information transfer unit for notifying the communication resource information stored in the communication resource information memory unit, to a

third communication node on the second network to which said communication terminal is newly connected.

22. A communication terminal, comprising:

5 an interface unit connected to a first network;  
a connection unit for making a connection to a first communication node on the first network through the interface unit;

10 a communication unit for communicating with a second communication node on a second network different from the first network, through the first communication node; and

an application execution unit for executing an application on the second network which is to be executed in the second communication node.

15

23. The communication terminal of claim 22, further comprising:

20 a configuration information reception unit for receiving at least a part of a configuration information regarding constituent elements existing in the first communication node including a constituent element corresponding to said communication terminal, which is notified from the first communication node in order for the first communication node to handle said communication  
25 terminal as one of constituent elements existing in the first communication node;

a configuration information memory unit for storing at least a part of the configuration information received by the configuration information reception unit; and

30 a configuration information notification unit for notifying at least a part of the configuration information stored in the configuration information memory unit, to a third communication node on the second network to which said communication terminal is newly connected.

35

24. The communication terminal of claim 22, further comprising:

5 a communication resource information reception unit for receiving a communication resource information regarding communication resources on the second network which are exclusively used for communications between said communication terminal and the second communication node, which is notified from the first communication node;

10 a communication resource information memory unit for storing at least a part of the communication resource information received by the communication resource information reception unit; and

15 a communication resource information transfer unit for notifying the communication resource information stored in the communication resource information memory unit, to a third communication node on the second network to which said communication terminal is newly connected.

20

25

30

35